

blance to the *C. nitidus*, but decidedly smaller, has the thorax contracted in front, and with the anterior angles obtuse—not produced as in *C. nitidus*. A more marked distinction, however, is seen in the structure of the antennæ, which, instead of being ten-jointed, as in *Cis*, are eight-jointed, viz., two stout joints at the base, followed by an elongate slender joint, then a short obconic joint, and between this and the three-jointed club a small transverse joint; the thorax is finely, but not densely punctured; the elytra are rather finely punctured, and rugulose.

Common in *Boleti*, near London and elsewhere.

XV. *Notes on the Economy of the Ichneumons constituting the Genus Pezomachus of Gravenhorst, and Observations on Pezomachus fasciatus*, by FREDERICK SMITH, Esq.; *with a Description of a New Species of Hemiteles*, by THOMAS DESVIGNES, Esq.

[Read July 4th, 1859.]

THE observations of Hymenopterists on the species of the genus *Pezomachus* have in some instances tended to prove that these *Ichneumons* are the parasites of parasites. Ratzeburg states that he obtained *Pezomachus agilis*, *P. instabilis* and *P. terebrator* from a species of *Microgaster*; *Pezomachus cursitans* has been reared from the cocoons of *Cryptus incubator*. Ratzeburg obtained *Pezomachus* from the cocoons of *Lophyrus Pini*, and also from those of *Cimbex variabilis*; in the two latter cases there does not appear to be any proof that the *Pezomachi* did not prey upon the larvæ of the saw-flies themselves; he also obtained *P. instabilis* from the nest of a spider. Dahlbom has reared a species of *Pezomachus* from a small moth belonging to the family *Tineina*—*Hypnomenuta Evonymellus*; Foerster has recorded the above facts in his Monograph on the genus *Pezomachus*.

Mr. Haliday has also reared a species of *Pezomachus* from the cocoons of *Microgaster intricatus*, as is recorded in the second volume of the "Entomological Magazine."

Mr. Westwood, in his great work on the "Modern Classification of Insects," informs us, that other species of *Ichneumons* deposit their eggs in the silken cocoons of various species of spiders,

and that *Pimpla oculatoria*, *Hemiteles palpator* and *Ichneumon araneorum* are nourished by the eggs of the spiders, and that they undergo their transformations within the spiders' silken cocoon or nest.

During the past summer I collected a number of the nests of a spider, *Agelena brunnea*; these nests may be frequently observed, attached to blades of grass, twigs of heath and other low shrubs; they are about the size of a cherry-stone, and are composed of beautiful snow-white silk, but coated over with a crust of mud, and thus very closely resemble the nest of a species of solitary wasp, *Eumenes coarctatus*, only being rather smaller. The latter circumstance has always induced me to examine these nests, but having usually found them filled with spiders, I have not paid much attention to them. On examining one about the middle of June last, I was surprised to find that it contained three or four oblong cocoons, evidently, as I thought, cocoons of some parasite. Having placed the nest carefully in a glass-topped box, I had the satisfaction, in the course of a day or two, to find four specimens of *Pezomachus fasciatus* developed; this circumstance induced me to collect the large number of the spiders' nests, I obtained seventy-three. The following have been the results: I have had in all twenty-two specimens of *Pezomachus* developed, only in one instance four from one nest, and in six cases three from each. In all the cases in which I obtained *Pezomachus*, not a single spider was likewise developed.

Another parasite on the spider appeared in about equal numbers, but never more than one from a single nest; in every instance, however, four or five spiders were subsequently developed from the same nest as the *Ichneumon*.

This latter parasite belongs to the genus *Hemiteles*, and appears to be a species previously unknown. I am indebted to Mr. Desvignes for having obligingly described the species with great care, under the name of *Hemiteles formosus*.

It appears to me that the fact of the *Pezomachus* feeding upon the spiders and not on the *Hemiteles* is clearly proved, as, in the latter case, spiders as well as *Pezomachus* ought to have been developed; and when we take into consideration the fact of *Pezomachus* being quite as bulky an insect as *Hemiteles*, it can scarcely be supposed that the larva or pupa of the latter could afford nourishment to three or four larvæ of the former.

During the last month not a single insect has been developed, and on opening several of the nests, I found in each, a pupa case

containing a living larva, being I have little doubt that of the *Ichneumon*.

HEMITELES FORMOSUS, Desvignes.

Abdomine rufo, apice nigro, segmentis 2—4 maculis nigris; pedibus anterioribus pallide fulvis, femorum posticorum fulvis apice nigris, tibiis posticis nigris fulvo-cingulatis.

Longitudo  $2\frac{1}{2}$ —3 linearum.

*Caput* fascia argenteo-sericea, mandibulis basi rufis. *Antennæ* dimidio corpore longiores, maris basi stramineis, reliquis subtus testaceis, feminæ obscurioribus.

*Thorax* gibbus, mesothorax antescutellum paululum excavato; metathorace sericeo. *Alæ* amplæ hyalinæ, nervis et stigmate nigris, radice et squamula pallidis, areolâ parvâ. *Pedes* graciles, anteriores pallide fulvæ, coxis et trochanteribus albis aut stramineis; femoribus posticis fulvis aut rufis apice nigris, tarsis et tibiis nigris harum medio annulo fulvo. *Abdomen* elongatum sub-lanceolatum, segmento 1° maris petiolato sub-lineare apice maculâ flavâ; 2° nigro apice fulvo medio versus basin angulato, 3—4 maculis lateralibus et reliquis nigris. Segmento 1° feminæ paulo latiore quam maris, apice obscure rufo; segmentis 2—4 rufo-castaneis utrimque maculis lateralibus nigris, aculeo vix dimidii abdominis longitudine.